

DATE: April 23, 2004

TO: NYSMATYC Membership

FROM: Kimberley A. Martello
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RE: 2003-2004 NYSMATYC Curriculum Survey on Comprehensive Assessment in
Two-Year College Mathematics Departments

Each year, the Curriculum Chair of the New York State Mathematics Association of Two-Year Colleges (NYSMATYC) conducts a survey on a topic that pertains to mathematics education or the mathematics curriculum. The 2003-2004 NYSMATYC Curriculum Survey was designed to study: “How do two-year college mathematics departments implement a comprehensive assessment of student learning outcomes for various types of mathematics courses?” Comprehensive assessment refers to the evaluation of each student’s overall learning of a majority of the mathematical concepts taught in the course during the full semester.

Specific course titles and content vary slightly between colleges. So, in order to collect data from the two-year colleges for the various mathematics courses, the courses were grouped into eight categories. The course categories used were: Non-credit Developmental Mathematics, Algebra Sequence and Precalculus, Calculus and Above, Statistics, Technical Mathematics, Mathematics for Elementary Teachers, Liberal Arts Mathematics Courses, and Other.

The survey was distributed to the NYSMATYC campus representatives at 52 two-year college campuses in New York State. The campus representatives were requested to consult with the various mathematics coordinators for each course in a particular course category to determine the college’s responses for each survey question. The survey responses from 32 of the college campuses were entered on a web-based survey¹ through a link on the NYSMATYC website. The 62% response rate was the result of sending three requests by e-mail, and making telephone calls to the campus representatives that had not responded by two weeks before the deadline.

The data shows some clear trends across the various course categories for the implementation of comprehensive assessment in two-year college mathematics departments. The report provides highlights of these trends in addition to more specific results for each of the course categories. The trends for the mathematics departments that have a formal plan for assessing student learning outcomes are also reported. The appendices include the survey responses for each course category, college and department data, and several cross-tabulation tables.

¹ Angel Andreu, Assistant Director of Institutional Research at Monroe Community College, formatted the survey to be web-based, and provided the cell frequencies, percents, cross-tabulations, and valuable advice.

Executive Summary

The responses from the two-year college mathematics departments show that the main tool used in all mathematics courses to measure the students' overall learning outcomes by the completion of the course is a comprehensive final examination. Projects and papers are also used as comprehensive assessment tools in more than one-fourth of the Statistics courses. The most popular format of the comprehensive assessment tool is the use of only open-ended questions. Alternatively, about one-fourth of the responses favored the use of a format with a combination of open-ended and multiple-choice questions on the comprehensive assessment tool. When asked when the comprehensive assessment tool was given or due, most of the mathematics departments indicated the comprehensive assessment was done at the end of the course.

A split exists between the course categories in regards to who is in charge of making the comprehensive assessment tool. For the Non-credit Developmental Mathematics as well as the Algebra Sequence and Precalculus courses, the majority of mathematics departments indicated that a departmental or course committee was in charge of making the comprehensive assessment tool. However, each individual instructor is more likely to be responsible for creating the comprehensive assessment tool in the remaining course categories: Calculus and Above, Statistics, Technical Mathematics, Mathematics for Elementary Teachers, Liberal Arts Math Courses, and Other. In regards to how often modifications are made to the comprehensive assessment tool, the majority of the mathematics departments indicated that modifications are made each semester. There is no significant relationship between the number of full-time faculty in the department and how often the comprehensive assessment tool is modified.

Each individual instructor handles the grading of the comprehensive assessment tool for each course in nearly all of the mathematics departments. The student scores from the comprehensive assessment tool are most commonly used as a weighted part of each student's course grade. The student's score from at least part of the comprehensive assessment tool is also used to determine the percentage of students that are meeting or exceeding the achievement expectations for a college's general education program in nearly half of the Algebra Sequence and Precalculus courses, almost a third of the Statistics and Liberal Arts Mathematics courses, and to a lesser degree in other mathematics courses. Additionally, mastery of the comprehensive assessment tool is important in about three out of ten Non-credit Developmental Mathematics courses.

Most colleges and mathematics departments have no minimum weight recommendation for including the student's comprehensive assessment tool score into the student's course grade. However, for the colleges or mathematics departments that had a recommendation for the minimum weight of the comprehensive assessment, it was mostly at least 21% of the student's course grade. Also, there was a split in the responses on whether the comprehensive assessment tool is required by the department, college, or an optional choice of the instructor.

Nearly two-thirds of the mathematics departments have a formal plan for assessing student learning outcomes. When comparing the data from all responding colleges to those from the mathematics departments that have a formal plan for assessing student learning outcomes, similar results were found across the course categories. The comparisons between the survey responses and the use of a formal assessment plan are detailed in the following report.

Highlights of the Comprehensive Assessment Survey Responses

Departments with a Formal Plan for Assessing Student Learning Outcomes

The following paragraphs highlight the findings for the mathematics departments that have a formal assessment plan, including some responses that were unique to those departments.

A comprehensive final examination with usually only open-ended questions is the tool predominantly used to measure the students' overall learning outcomes, and it is given at the end of the course. There are more responses indicating the use of a comprehensive final examination for the mathematics departments that have a formal plan for assessing student learning outcomes than for those departments without a formal assessment plan. The use of a combination of open-ended and multiple-choice questions on the comprehensive assessment tool is common to a lesser degree. The department or course committee is most likely to be in charge of creating the comprehensive assessment tool in the Non-credit Developmental Mathematics and the Algebra Sequence and Precalculus courses, which is especially evident for the mathematics departments with a formal assessment plan. On the other hand, each individual instructor is more likely to create the assessment tool in the remaining course categories.

Each individual instructor is responsible for grading the comprehensive assessment tool. The rare responses indicating the use of a team, group of instructors, or a machine to grade the comprehensive assessment tool were only found where the mathematics department has a formal plan for assessing student learning outcomes. Most colleges and mathematics departments have no minimum weight recommendation for including the student's comprehensive assessment tool score into the student's course grade. However, for the colleges or mathematics departments that had a recommendation for the minimum weight of the comprehensive assessment, it was mostly at least 21% of the student's course grade, whether or not a formal assessment plan was in place.

The resulting student scores from the comprehensive assessment tool play a strong role as a weighted part of the student's course grade. Mastery of the comprehensive assessment tool is required for students to pass the Non-credit Developmental Mathematics courses in several of the colleges. The student scores from at least part of the comprehensive assessment tool are more likely to be used to determine the percentage of students that are meeting or exceeding the achievement expectations for a college's general education program when the mathematics department has a formal plan for assessing student learning outcomes, rather than when no formal plan is in place. The uncommon responses that indicated the student scores are used to test for teaching consistency among the instructors of the course at the college were also related to the mathematics department having a formal plan for assessing student learning outcomes for five of the eight course categories.

As indicated in many of the responses, either the mathematics department or the college is likely to be requiring the use of the comprehensive assessment tool. However, for seven of the eight course categories, the only *colleges* that required the use of the comprehensive tool were those where the mathematics department had a formal plan for assessing student learning outcomes.

Non-credit Developmental Mathematics

94% of the two-year college mathematics departments that responded to the survey submitted data for this course category. Each of the percentages indicated below represent the proportion of all mathematics departments that responded to the comprehensive assessment survey.

When asked about the type and format of comprehensive assessment tool that is used to measure the students' overall learning outcomes by the completion of the mathematics course,

- 94% use a comprehensive final examination to measure the students' overall learning outcomes.
- 56% use only open-ended questions on the comprehensive assessment tool.
- One-fourth uses a combination of open-ended and multiple-choice questions on the comprehensive assessment tool.
- 13% use only multiple-choice questions on the comprehensive assessment tool.

In regards to when the comprehensive assessment tool is given or due and if the college or mathematics department requires the use of the comprehensive assessment,

- Nearly nine out of ten give the comprehensive assessment tool at the end of the course.
- 59% reported that their department requires the use of the comprehensive assessment tool, and another one-fourth reported that their college requires it.

When asked to identify who is in charge of creating the comprehensive assessment tool and how often modifications are made to the assessment tool,

- Two-thirds assign a departmental or course committee to create the comprehensive assessment tool.
- Nearly one-fourth has each individual instructor create the comprehensive assessment tool.
- 59% modify the comprehensive assessment tool each semester.
- 19% modify the comprehensive assessment tool once every three or more years.

When asked who grades the comprehensive assessment tool and how the student scores are used,

- 91% have each individual instructor grade the comprehensive assessment tool.
- More than two-thirds use the student's score from the comprehensive assessment tool as a weighted part of the student's course grade.
- 28% require mastery of the comprehensive assessment tool for students to pass the course.
- Nearly one-fourth use the student's score from at least part of the comprehensive assessment tool to determine the percentage of students that are meeting or exceeding the achievement expectations for that course for a college's general education program.

In regards to the minimum weight recommended by the mathematics department or the college for including the student's comprehensive assessment tool score into the student's course grade,

- 56% have no minimum weight recommendation for including the student's score on the comprehensive assessment tool into the student's course grade.
- Nearly one-third requires the comprehensive assessment tool to have a minimum weight of at least 21% of the student's course grade.

Algebra Sequence and Precalculus

94% of the two-year college mathematics departments that responded to the survey submitted data for this course category. Each of the percentages indicated below represent the proportion of all mathematics departments that responded to the comprehensive assessment survey.

When asked about the type and format of comprehensive assessment tool that is used to measure the students' overall learning outcomes by the completion of the mathematics course,

- 91% use a comprehensive final examination to measure the students' overall learning outcomes.
- Half use only open-ended questions on the comprehensive assessment tool.
- Nearly one-third uses a combination of open-ended and multiple-choice questions on the comprehensive assessment tool.
- 9% use only multiple-choice questions on the comprehensive assessment tool.

In regards to when the comprehensive assessment tool is given or due and if the college or mathematics department requires the use of the comprehensive assessment,

- 81% give the comprehensive assessment tool at the end of the course.
- 53% reported that their department requires the use of the comprehensive assessment tool, and another one-fourth reported that their college requires it.

When asked to identify who is in charge of creating the comprehensive assessment tool and how often modifications are made to the assessment tool,

- Half assign a departmental or course committee to create the comprehensive assessment tool.
- 44% have each individual instructor create the comprehensive assessment tool.
- Two-thirds modify the comprehensive assessment tool each semester.
- 13% modify the comprehensive assessment tool once every three or more years.

When asked who grades the comprehensive assessment tool and how the student scores are used,

- 84% have each individual instructor grade the comprehensive assessment tool.
- 81% use the student's score from the comprehensive assessment tool as a weighted part of the student's course grade.
- 44% use the student's score from at least part of the comprehensive assessment tool to determine the percentage of students that are meeting or exceeding the achievement expectations for that course for a college's general education program.
- 9% use the student's score from the comprehensive assessment tool to statistically test for teaching consistency among the instructors of the course at the college.

In regards to the minimum weight recommended by the mathematics department or the college for including the student's comprehensive assessment tool score into the student's course grade,

- 59% have no minimum weight recommendation for including the student's score on the comprehensive assessment tool into the student's course grade.
- Nearly three out of ten require the comprehensive assessment tool to have a minimum weight of at least 21% of the student's course grade.

Calculus and Above

88% of the two-year college mathematics departments that responded to the survey submitted data for this course category. Each of the percentages indicated below represent the proportion of all mathematics departments that responded to the comprehensive assessment survey.

When asked about the type and format of comprehensive assessment tool that is used to measure the students' overall learning outcomes by the completion of the mathematics course,

- 84% use a comprehensive final examination to measure the students' overall learning outcomes.
- 59% use only open-ended questions on the comprehensive assessment tool.
- Nearly one-fourth uses a combination of open-ended and multiple-choice questions on the comprehensive assessment tool.

In regards to when the comprehensive assessment tool is given or due and if the college or mathematics department requires the use of the comprehensive assessment,

- Nearly three-fourths give the comprehensive assessment tool at the end of the course.
- 9% give the comprehensive assessment tool throughout the course.
- 41% reported that their department requires the use of the comprehensive assessment tool, and another one-fourth reported that their college requires it.

When asked to identify who is in charge of creating the comprehensive assessment tool and how often modifications are made to the assessment tool,

- Half have each individual instructor create the comprehensive assessment tool.
- One-third assigns a departmental or course committee to create the comprehensive assessment tool.
- Nearly two-thirds modify the comprehensive assessment tool each semester.

When asked who grades the comprehensive assessment tool and how the student scores are used,

- 81% have each individual instructor grade the comprehensive assessment tool.
- 78% use the student's score from the comprehensive assessment tool as a weighted part of the student's course grade.
- Nearly one-fourth use the student's score from at least part of the comprehensive assessment tool to determine the percentage of students that are meeting or exceeding the achievement expectations for that course for a college's general education program.

In regards to the minimum weight recommended by the mathematics department or the college for including the student's comprehensive assessment tool score into the student's course grade,

- Half have no minimum weight recommendation for including the student's score on the comprehensive assessment tool into the student's course grade.
- Nearly three out of ten require the comprehensive assessment tool to have a minimum weight of at least 21% of the student's course grade,

Statistics

91% of the two-year college mathematics departments that responded to the survey submitted data for this course category. Each of the percentages indicated below represent the proportion of all mathematics departments that responded to the comprehensive assessment survey.

When asked about the type and format of comprehensive assessment tool that is used to measure the students' overall learning outcomes by the completion of the mathematics course,

- 81% use a comprehensive final examination to measure the students' overall learning outcomes.
- 28% use a project or paper to measure the students' overall learning outcomes.
- More than half use only open-ended questions on the comprehensive assessment tool.
- One-fourth uses a combination of open-ended and multiple-choice questions on the comprehensive assessment tool.

In regards to when the comprehensive assessment tool is given or due and if the college or mathematics department requires the use of the comprehensive assessment,

- Three-fourths give the comprehensive assessment tool at the end of the course.
- 13% give the comprehensive assessment tool throughout the course.
- 38% reported that their department requires the use of the comprehensive assessment tool, and another one-fourth reported that their college requires it.

When asked to identify who is in charge of creating the comprehensive assessment tool and how often modifications are made to the assessment tool,

- Half have each individual instructor create the comprehensive assessment tool.
- One-third assigns a departmental or course committee to create the comprehensive assessment tool.
- Nearly two-thirds modify the comprehensive assessment tool each semester.
- 9% modify the comprehensive assessment tool once every three or more years.

When asked who grades the comprehensive assessment tool and how the student scores are used,

- 81% have each individual instructor grade the comprehensive assessment tool.
- 81% use the student's score from the comprehensive assessment tool as a weighted part of the student's course grade.
- Nearly one-third use the student's score from at least part of the comprehensive assessment tool to determine the percentage of students that are meeting or exceeding the achievement expectations for that course for a college's general education program.

In regards to the minimum weight recommended by the mathematics department or the college for including the student's comprehensive assessment tool score into the student's course grade,

- 59% have no minimum weight recommendation for including the student's score on the comprehensive assessment tool into the student's course grade.
- One-fourth requires the comprehensive assessment tool to have a minimum weight of at least 21% of the student's course grade.

Liberal Arts Mathematics Courses

69% of the two-year college mathematics departments that responded to the survey submitted data for this course category. Each of the percentages indicated below represent the proportion of all mathematics departments that responded to the comprehensive assessment survey.

When asked about the type and format of comprehensive assessment tool that is used to measure the students' overall learning outcomes by the completion of the mathematics course,

- Nearly two-thirds use a comprehensive final examination to measure the students' overall learning outcomes.
- 9% use a project or paper to measure the students' overall learning outcomes.
- 41% use only open-ended questions on the comprehensive assessment tool.
- Nearly one-fourth uses a combination of open-ended and multiple-choice questions on the comprehensive assessment tool.

In regards to when the comprehensive assessment tool is given or due and if the college or mathematics department requires the use of the comprehensive assessment,

- Half give the comprehensive assessment tool at the end of the course.
- 13% give the comprehensive assessment tool throughout the course.
- One-fourth reported that their department requires the use of the comprehensive assessment tool, and another one-fourth reported that their college requires it.

When asked to identify who is in charge of creating the comprehensive assessment tool and how often modifications are made to the assessment tool,

- 41% have each individual instructor create the comprehensive assessment tool.
- 28% assign a departmental or course committee to create the comprehensive assessment tool.
- Half modify the comprehensive assessment tool each semester.
- 9% modify the comprehensive assessment tool once a year.

When asked who grades the comprehensive assessment tool and how the student scores are used,

- Two-thirds have each individual instructor grade the comprehensive assessment tool.
- 59% use the student's score from the comprehensive assessment tool as a weighted part of the student's course grade.
- Nearly one-third use the student's score from at least part of the comprehensive assessment tool to determine the percentage of students that are meeting or exceeding the achievement expectations for that course for a college's general education program.

In regards to the minimum weight recommended by the mathematics department or the college for including the student's comprehensive assessment tool score into the student's course grade,

- 44% have no minimum weight recommendation for including the student's score on the comprehensive assessment tool into the student's course grade.
- Nearly one-fourth requires the comprehensive assessment tool to have a minimum weight of at least 21% of the student's course grade.

Technical Mathematics

56% of the two-year college mathematics departments that responded to the survey submitted data for this course category. This lower response rate may be due to fewer colleges offering the Technical Mathematics courses. Each of the percentages indicated below represent the proportion of all mathematics departments that responded to the comprehensive assessment survey.

When asked about the type and format of comprehensive assessment tool that is used to measure the students' overall learning outcomes by the completion of the mathematics course,

- 56% use a comprehensive final examination to measure the students' overall learning outcomes.
- One-third use only open-ended questions on the comprehensive assessment tool.
- Nearly one-fourth uses a combination of open-ended and multiple-choice questions on the comprehensive assessment tool.

In regards to when the comprehensive assessment tool is given or due and if the college or mathematics department requires the use of the comprehensive assessment,

- 44% give the comprehensive assessment tool at the end of the course.
- 9% give the comprehensive assessment tool throughout the course.
- One-fourth reported that their department requires the use of the comprehensive assessment tool, and another 13% reported that their college requires it.

When asked to identify who is in charge of creating the comprehensive assessment tool and how often modifications are made to the assessment tool,

- One-third has each individual instructor create the comprehensive assessment tool.
- Nearly one-fourth assigns a departmental or course committee to create the comprehensive assessment tool.
- 41% modify the comprehensive assessment tool each semester.
- 9% modify the comprehensive assessment tool once a year.

When asked who grades the comprehensive assessment tool and how the student scores are used,

- 56% have each individual instructor grade the comprehensive assessment tool.
- 47% use the student's score from the comprehensive assessment tool as a weighted part of the student's course grade.
- One-fifth use the student's score from at least part of the comprehensive assessment tool to determine the percentage of students that are meeting or exceeding the achievement expectations for that course for a college's general education program.

In regards to the minimum weight recommended by the mathematics department or the college for including the student's comprehensive assessment tool score into the student's course grade,

- One-third has no minimum weight recommendation for including the student's score on the comprehensive assessment tool into the student's course grade.
- One-fifth requires the comprehensive assessment tool to have a minimum weight of at least 21% of the student's course grade.

Mathematics for Elementary Teachers

50% of the two-year college mathematics departments that responded to the survey submitted data for this course category. This lower response rate may be due to fewer colleges offering the Mathematics for Elementary Teachers courses. Each of the percentages indicated below represent the proportion of all mathematics departments that responded to the comprehensive assessment survey.

When asked about the type and format of comprehensive assessment tool that is used to measure the students' overall learning outcomes by the completion of the mathematics course,

- 41% use a comprehensive final examination to measure the students' overall learning outcomes.
- 28% use only open-ended questions on the comprehensive assessment tool.
- 16% use a combination of open-ended and multiple-choice questions on the comprehensive assessment tool.

In regards to when the comprehensive assessment tool is given or due and if the college or mathematics department requires the use of the comprehensive assessment,

- One-third gives the comprehensive assessment tool at the end of the course.
- 13% give the comprehensive assessment tool throughout the course.
- Nearly one-fourth reported that their department requires the use of the comprehensive assessment tool, and another 16% reported that their college requires it.

When asked to identify who is in charge of creating the comprehensive assessment tool and how often modifications are made to the assessment tool,

- 28% have each individual instructor create the comprehensive assessment tool.
- One-fifth assigns a departmental or course committee to create the comprehensive assessment tool.
- 38% modify the comprehensive assessment tool each semester.

When asked who grades the comprehensive assessment tool and how the student scores are used,

- 44% have each individual instructor grade the comprehensive assessment tool.
- 41% use the student's score from the comprehensive assessment tool as a weighted part of the student's course grade.
- Nearly one-fourth use the student's score from at least part of the comprehensive assessment tool to determine the percentage of students that are meeting or exceeding the achievement expectations for that course for a college's general education program.

In regards to the minimum weight recommended by the mathematics department or the college for including the student's comprehensive assessment tool score into the student's course grade,

- 38% have no minimum weight recommendation for including the student's score on the comprehensive assessment tool into the student's course grade.
- 13% require the comprehensive assessment tool to have a minimum weight of at least 21% of the student's course grade.

Other Mathematics Courses

22% of the two-year college mathematics departments that responded to the survey submitted data for this course category. This category is designed for the courses that do not clearly fit in one of the previous course categories. Examples include, but are not limited to Business Mathematics and History of Mathematics courses. The courses that would fall in this category may not be common among the colleges, and this may be a contributing factor to the very low response rate. Each of the percentages indicated below represent the proportion of all mathematics departments that responded to the comprehensive assessment survey.

When asked about the type and format of comprehensive assessment tool that is used to measure the students' overall learning outcomes by the completion of the mathematics course,

- One-fifth uses a comprehensive final examination to measure the students' overall learning outcomes.
- 9% use only open-ended questions on the comprehensive assessment tool.
- 9% use a combination of open-ended and multiple-choice questions on the comprehensive assessment tool.

In regards to when the comprehensive assessment tool is given or due and if the college or mathematics department requires the use of the comprehensive assessment,

- Nearly one-fourth gives the comprehensive assessment tool at the end of the course.
- 13% reported that their college requires the use of the comprehensive assessment tool.

When asked to identify who is in charge of creating the comprehensive assessment tool and how often modifications are made to the assessment tool,

- 13% have each individual instructor create the comprehensive assessment tool.
- 9% assign a departmental or course committee to create the comprehensive assessment tool.
- 13% modify the comprehensive assessment tool each semester.

When asked who grades the comprehensive assessment tool and how the student scores are used,

- One-fifth has each individual instructor grade the comprehensive assessment tool.
- 16% use the student's score from the comprehensive assessment tool as a weighted part of the student's course grade.

In regards to the minimum weight recommended by the mathematics department or the college for including the student's comprehensive assessment tool score into the student's course grade,

- 13% have no minimum weight recommendation for including the student's score on the comprehensive assessment tool into the student's course grade.
- 6% require the comprehensive assessment tool to have a minimum weight of at least 21% of the student's course grade.

APPENDICES

NYSMATYC Curriculum Survey on Comprehensive Assessment
Summary of Data

College and Mathematics Department Data

Cross-Tabulation of Formal Assessment Plan with Survey Responses

Cross-Tabulation of Number of Full-time Mathematics Faculty with
Modifying the Comprehensive Assessment Each Semester

NYSMATYC Curriculum Survey on Comprehensive Assessment Summary of Data

The 2003-2004 NYSMATYC Curriculum Survey is designed to study: “How do two-year college mathematics departments implement a comprehensive assessment of student learning outcomes for various types of mathematics courses?” Comprehensive assessment refers to the evaluation of the students’ overall learning of a majority of the mathematical concepts taught in the course during the full semester.

Original # on survey		Non-credit Developmental Mathematics	Algebra Sequence and Precalculus	Calculus and Above	Statistics	Technical Mathematics	Mathematics for Elementary Teachers	Liberal Arts Math Courses	Other
2	What type of comprehensive assessment tool is used to measure the students’ overall learning outcomes by the completion of the mathematics course? (Check all that apply for each course category.)								
	a) Comprehensive final examination	30 93.8%	29 90.6%	27 84.4%	26 81.3%	18 56.3%	13 40.6%	20 62.5%	6 18.8%
	b) Project/Paper	0 0%	0 0%	2 6.3%	9 28.1%	0 0%	2 6.3%	3 9.4%	1 3.1%
	c) Presentation	0 0%	0 0%	0 0%	1 3.1%	0 0%	1 3.1%	2 6.3%	0 0%
	d) Portfolio	0 0%	0 0%	1 3.1%	1 3.1%	0 0%	2 6.3%	1 3.1%	1 3.1%
3	What is the format of the comprehensive assessment tool? (Check only one for each course category.)								
	a) Open ended	18 56.3%	16 50.0%	19 59.4%	17 53.1%	11 34.4%	9 28.1%	13 40.6%	3 9.4%
	b) Multiple choice	4 12.5%	3 9.4%	1 3.1%	2 6.3%	0 0%	1 3.1%	2 6.3%	1 3.1%
	c) Combination of open ended and multiple choice	8 25.0%	10 31.3%	7 21.9%	8 25.0%	7 21.9%	5 15.6%	7 21.9%	3 9.4%

Original # on survey		Non-credit Developmental Mathematics	Algebra Sequence and Precalculus	Calculus and Above	Statistics	Technical Mathematics	Mathematics for Elementary Teachers	Liberal Arts Math Courses	Other
4	When is the comprehensive assessment tool given/due? (Check only one for each course category.)								
	a) End of the course	28 87.5%	26 81.3%	23 71.9%	24 75.0%	14 43.8%	11 34.4%	16 50.0%	7 21.9%
	b) Throughout the course	2 6.3%	2 6.3%	3 9.4%	4 12.5%	3 9.4%	4 12.5%	4 12.5%	0 0%
5	Who is in charge of creating the comprehensive assessment tool? (Check only one for each course category.)								
	a) Departmental or course committee	21 65.6%	16 50.0%	11 34.4%	11 34.4%	7 21.9%	6 18.8%	9 28.1%	3 9.4%
	b) Each individual instructor	7 21.9%	14 43.8%	16 50.0%	16 50.0%	11 34.4%	9 28.1%	13 40.6%	4 12.5%
	c) Designated assessment coordinator	1 3.1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
6	Who grades the comprehensive assessment tool? (Check only one for each course category.)								
	a) Each individual instructor	29 90.6%	27 84.4%	26 81.3%	26 81.3%	18 56.3%	14 43.8%	21 65.6%	6 18.8%
	b) Team or group of instructors	0 0%	1 3.1%	0 0%	1 3.1%	0 0%	1 3.1%	0 0%	0 0%
	c) Machine	0 0%	1 3.1%	1 3.1%	1 3.1%	0 0%	0 0%	1 3.1%	1 3.1%
	d) Teaching assistant	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%

Original # on survey		Non-credit Developmental Mathematics	Algebra Sequence and Precalculus	Calculus and Above	Statistics	Technical Mathematics	Mathematics for Elementary Teachers	Liberal Arts Math Courses	Other
7	In what ways are the student scores from the comprehensive assessment tool used? (Check all that apply.)								
	a) Weighted part of the students' course grade	22 68.8%	26 81.3%	25 78.1%	26 81.3%	15 46.9%	13 40.6%	19 59.4%	5 15.6%
	b) Mastery of the comprehensive assessment tool is required for students to pass the course.	9 28.1%	2 6.3%	2 6.3%	2 6.3%	1 3.1%	1 3.1%	2 6.3%	2 6.3%
	c) Student scores are used to test for teaching consistency among the instructors of the course at your college.	1 3.1%	3 9.4%	2 6.3%	2 6.3%	1 3.1%	1 3.1%	2 6.3%	1 3.1%
	d) The student's score from at least part of the comprehensive assessment tool is used to determine the percentage of students that are meeting or exceeding the achievement expectations for that course for a college's general education program.	7 21.9%	14 43.8%	7 21.9%	10 31.3%	6 18.8%	7 21.9%	10 31.3%	1 3.1%
9	Which best describes the use of the comprehensive assessment tool? (Check only one for each course category.)								
	a) Required by your department	19 59.4%	17 53.1%	13 40.6%	12 37.5%	8 25.0%	7 21.9%	8 25.0%	1 3.1%
	b) Required by your college	8 25.0%	8 25.0%	8 25.0%	8 25.0%	4 12.5%	5 15.6%	8 25.0%	4 12.5%
	c) Optional choice of the instructor	3 9.4%	5 15.6%	7 21.9%	9 28.1%	6 18.8%	3 9.4%	6 18.8%	2 6.3%

Original # on survey		Non-credit Developmental Mathematics	Algebra Sequence and Precalculus	Calculus and Above	Statistics	Technical Mathematics	Mathematics for Elementary Teachers	Liberal Arts Math Courses	Other
8	What is the minimum weight recommended by your department or college for including the student's comprehensive assessment tool score into the student's course grade? (Check only one for each course category.)								
	a) No recommendation	18 56.3%	19 59.4%	16 50.0%	19 59.4%	11 34.4%	12 37.5%	14 43.8%	4 12.5%
	b) 1% to 10%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
	c) 11% to 20%	1 3.1%	1 3.1%	2 6.3%	1 3.1%	0 0%	0 0%	0 0%	0 0%
	d) 21% to 30%	5 15.6%	6 18.8%	6 18.8%	5 15.6%	4 12.5%	3 9.4%	4 12.5%	1 3.1%
	e) 31% or more	5 15.6%	3 9.4%	3 9.4%	3 9.4%	2 6.3%	1 3.1%	3 9.4%	1 3.1%
10	Which best describes the frequency of when modifications are made to the comprehensive assessment tool? (Check only one for each course category.)								
	a) Each semester	19 59.4%	21 65.6%	20 62.5%	20 62.5%	13 40.6%	12 37.5%	16 50.0%	4 12.5%
	b) Once a year	3 9.4%	2 6.3%	2 6.3%	2 6.3%	3 9.4%	1 3.1%	3 9.4%	1 3.1%
	c) Once every two years	1 3.1%	1 3.1%	1 3.1%	1 3.1%	0 0%	0 0%	1 3.1%	1 3.1%
	d) Once every three or more years	6 18.8%	4 12.5%	2 6.3%	3 9.4%	1 3.1%	2 6.3%	1 3.1%	1 3.1%

College and Mathematics Department Data

College Name	Number of Students Attending the College (Fall 2003)	Number of Full-time Mathematics Faculty (Fall 2003)	Does your department have a formal plan for assessing student learning outcomes?	
Adirondack Community College	3,514	9	Yes	
Alfred State College	3,471	8		No
Bronx Community College	7,950	26		No
Broome Community College	5,200	15	Yes	
Cayuga Community College	3,711	4	Yes	
Clinton Community College	2,231	6	Yes	
Corning Community College	2,267	11	Yes	
Dutchess Community College	7,761	10		No
Erie Community College	12,284	51	Yes	
Erie Community College - South Campus	3,521	15		No
Finger Lakes Community College	4,723	9	Yes	
Fulton - Montgomery Community College	1,825	5		No
Genesee Community College	5,400	7	Yes	
Herkimer County Community College	3,357	2	Yes	
Hostos Community College	4,023	17	Yes	
Hudson Valley Community College	11,405	19	Yes	
Jamestown CC - Jamestown/Dunkirk Campus	2,040	5	Yes	
Mohawk Valley Community College	5,842	14	Yes	
Monroe College	*	10		No
Monroe Community College	16,596	32	Yes	
Niagara County Community College	5,252	15	Yes	
North Country CC of Franklin & Essex	1,357	3		No
Onondaga Community College	8,150	16		No
Queensborough Community College	12,000	21	Yes	
Rockland Community College	6,200	7		No
Suffolk County CC – Ammerman Campus	12,200	21	Yes	
Suffolk County CC – Eastern Campus	2,700	4		No
SUNY Canton	2,544	4		No
SUNY Cobleskill	2,484	7	Yes	
SUNY College at Morrisville	3,800	7	Yes	
Ulster County Community College	2,000	6		No
Westchester Community College	12,000	14	Yes	

Cross-Tabulation of Formal Assessment Plan with the Survey Responses

2. What type of comprehensive assessment tool is used to measure the students' overall learning outcomes by the completion of the mathematics course?	8. Does your department have a formal plan for assessing student learning outcomes?			
	Yes		No	
	Count	Row %	Count	Row %
a) Comprehensive final examination				
Non-credit Developmental Mathematics	18	60.0%	12	40.0%
Algebra Sequence and Precalculus	19	65.5%	10	34.5%
Calculus and Above	17	63.0%	10	37.0%
Statistics	16	61.5%	10	38.5%
Technical Mathematics	11	61.1%	7	38.9%
Mathematics for Elementary Teachers	10	76.9%	3	23.1%
Liberal Arts Math Courses	14	70.0%	6	30.0%
Other	6	100.0%	0	.0%

3. What is the format of the comprehensive assessment tool?	8. Does your department have a formal plan for assessing student learning outcomes?			
	Yes		No	
	Count	Row %	Count	Row %
a) Open-ended				
Non-credit Developmental Mathematics	12	66.7%	6	33.3%
Algebra Sequence and Precalculus	11	68.8%	5	31.3%
Calculus and Above	12	63.2%	7	36.8%
Statistics	12	70.6%	5	29.4%
Technical Mathematics	7	63.6%	4	36.4%
Mathematics for Elementary Teachers	8	88.9%	1	11.1%
Liberal Arts Math Courses	9	69.2%	4	30.8%
Other	3	100.0%	0	.0%
b) Multiple-choice				
Non-credit Developmental Mathematics	1	25.0%	3	75.0%
Algebra Sequence and Precalculus	2	66.7%	1	33.3%
Calculus and Above	1	100.0%	0	.0%
Statistics	2	100.0%	0	.0%
Mathematics for Elementary Teachers	1	100.0%	0	.0%
Liberal Arts Math Courses	1	50.0%	1	50.0%
Other	1	100.0%	0	.0%
c) Combination of open-ended and Multiple-choice				
Non-credit Developmental Mathematics	5	62.5%	3	37.5%
Algebra Sequence and Precalculus	6	60.0%	4	40.0%
Calculus and Above	4	57.1%	3	42.9%
Statistics	4	50.0%	4	50.0%
Technical Mathematics	4	57.1%	3	42.9%
Mathematics for Elementary Teachers	3	60.0%	2	40.0%
Liberal Arts Math Courses	5	71.4%	2	28.6%
Other	3	100.0%	0	.0%

4. When is the comprehensive assessment tool given/due?	8. Does your department have a formal plan for assessing student learning outcomes?			
	Yes		No	
	Count	Row %	Count	Row %
a) End of the course				
Non-credit Developmental Mathematics	17	60.7%	11	39.3%
Algebra Sequence and Precalculus	17	65.4%	9	34.6%
Calculus and Above	15	65.2%	8	34.8%
Statistics	16	66.7%	8	33.3%
Technical Mathematics	10	71.4%	4	28.6%
Mathematics for Elementary Teachers	8	72.7%	3	27.3%
Liberal Arts Math Courses	12	75.0%	4	25.0%
Other	7	100.0%	0	.0%
b) Throughout the course				
Non-credit Developmental Mathematics	1	50.0%	1	50.0%
Algebra Sequence and Precalculus	1	50.0%	1	50.0%
Calculus and Above	1	33.3%	2	66.7%
Statistics	2	50.0%	2	50.0%
Technical Mathematics	1	33.3%	2	66.7%
Mathematics for Elementary Teachers	3	75.0%	1	25.0%
Liberal Arts Math Courses	2	50.0%	2	50.0%

5. Who is in charge of creating the comprehensive assessment tool?	8. Does your department have a formal plan for assessing student learning outcomes?			
	Yes		No	
	Count	Row %	Count	Row %
a) Department or course committee				
Non-credit Developmental Mathematics	14	66.7%	7	33.3%
Algebra Sequence and Precalculus	12	75.0%	4	25.0%
Calculus and Above	7	63.6%	4	36.4%
Statistics	7	63.6%	4	36.4%
Technical Mathematics	5	71.4%	2	28.6%
Mathematics for Elementary Teachers	5	83.3%	1	16.7%
Liberal Arts Math Courses	7	77.8%	2	22.2%
Other	3	100.0%	0	.0%
b) Each individual instructor				
Non-credit Developmental Mathematics	3	42.9%	4	57.1%
Algebra Sequence and Precalculus	8	57.1%	6	42.9%
Calculus and Above	10	62.5%	6	37.5%
Statistics	11	68.8%	5	31.3%
Technical Mathematics	6	54.5%	5	45.5%
Mathematics for Elementary Teachers	7	77.8%	2	22.2%
Liberal Arts Math Courses	8	61.5%	5	38.5%
Other	4	100.0%	0	.0%
c) Designated assessment coordinator				
Non-credit Developmental Mathematics	1	100.0%	0	.0%

6. Who grades the comprehensive tool?	8. Does your department have a formal plan for assessing student learning outcomes?			
	Yes		No	
	Count	Row %	Count	Row %
a) Each individual instructor				
Non-credit Developmental Mathematics	18	62.1%	11	37.9%
Algebra Sequence and Precalculus	17	63.0%	10	37.0%
Calculus and Above	16	61.5%	10	38.5%
Statistics	16	61.5%	10	38.5%
Technical Mathematics	11	61.1%	7	38.9%
Mathematics for Elementary Teachers	11	78.6%	3	21.4%
Liberal Arts Math Courses	14	66.7%	7	33.3%
Other	6	100.0%	0	.0%
b) Team or group of instructors				
Algebra Sequence and Precalculus	1	100.0%	0	.0%
Statistics	1	100.0%	0	.0%
Mathematics for Elementary Teachers	1	100.0%	0	.0%
c) Machine				
Algebra Sequence and Precalculus	1	100.0%	0	.0%
Calculus and Above	1	100.0%	0	.0%
Statistics	1	100.0%	0	.0%
Liberal Arts Math Courses	1	100.0%	0	.0%
Other	1	100.0%	0	.0%

7. In what ways are the student scores from the comprehensive assessment tool used?	8. Does your department have a formal plan for assessing student learning outcomes?			
	Yes		No	
	Count	Row %	Count	Row %
a) Weighted part of students' course grade				
Non-credit Developmental Mathematics	13	59.1%	9	40.9%
Algebra Sequence and Precalculus	17	65.4%	9	34.6%
Calculus and Above	16	64.0%	9	36.0%
Statistics	17	65.4%	9	34.6%
Technical Mathematics	9	60.0%	6	40.0%
Mathematics for Elementary Teachers	10	76.9%	3	23.1%
Liberal Arts Math Courses	13	68.4%	6	31.6%
Other	5	100.0%	0	.0%
b) Mastery of the comprehensive tool is required for students to pass the course.				
Non-credit Developmental Mathematics	6	66.7%	3	33.3%
Algebra Sequence and Precalculus	1	50.0%	1	50.0%
Calculus and Above	1	50.0%	1	50.0%
Statistics	1	50.0%	1	50.0%
Technical Mathematics	0	.0%	1	100.0%
Mathematics for Elementary Teachers	1	100.0%	0	.0%
Liberal Arts Math Courses	1	50.0%	1	50.0%
Other	2	100.0%	0	.0%
c) Student scores are used to test for teaching consistency among the instructors of the course at your college.				
Non-credit Developmental Mathematics	1	100.0%	0	.0%
Algebra Sequence and Precalculus	2	66.7%	1	33.3%
Calculus and Above	1	50.0%	1	50.0%
Statistics	1	50.0%	1	50.0%
Technical Mathematics	1	100.0%	0	.0%
Mathematics for Elementary Teachers	1	100.0%	0	.0%
Liberal Arts Math Courses	2	100.0%	0	.0%
Other	1	100.0%	0	.0%
d) The student's score from at least part of the comprehensive assessment tool is used to determine the percentage of students that are meeting or exceeding the achievement expectations for that course for a college's gen. ed. program.				
Non-credit Developmental Mathematics	5	71.4%	2	28.6%
Algebra Sequence and Precalculus	10	71.4%	4	28.6%
Calculus and Above	5	71.4%	2	28.6%
Statistics	8	80.0%	2	20.0%
Technical Mathematics	4	66.7%	2	33.3%
Mathematics for Elementary Teachers	7	100.0%	0	.0%
Liberal Arts Math Courses	7	70.0%	3	30.0%
Other	1	100.0%	0	.0%

8. What is the minimum weight recommended by your department or college for including the student's comprehensive assessment tool score into the student's course grade?	8. Does your department have a formal plan for assessing student learning outcomes?			
	Yes		No	
	Count	Row %	Count	Row %
a) No recommendation				
Non-credit Developmental Mathematics	11	61.1%	7	38.9%
Algebra Sequence and Precalculus	12	63.2%	7	36.8%
Calculus and Above	10	62.5%	6	37.5%
Statistics	12	63.2%	7	36.8%
Technical Mathematics	8	72.7%	3	27.3%
Mathematics for Elementary Teachers	10	83.3%	2	16.7%
Liberal Arts Math Courses	10	71.4%	4	28.6%
Other	4	100.0%	0	.0%
c) 11% to 20%				
Non-credit Developmental Mathematics	1	100.0%	0	.0%
Algebra Sequence and Precalculus	1	100.0%	0	.0%
Calculus and Above	2	100.0%	0	.0%
Statistics	1	100.0%	0	.0%
d) 21% to 30%				
Non-credit Developmental Mathematics	3	60.0%	2	40.0%
Algebra Sequence and Precalculus	4	66.7%	2	33.3%
Calculus and Above	3	50.0%	3	50.0%
Statistics	3	60.0%	2	40.0%
Technical Mathematics	2	50.0%	2	50.0%
Mathematics for Elementary Teachers	1	33.3%	2	66.7%
Liberal Arts Math Courses	3	75.0%	1	25.0%
Other	1	100.0%	0	.0%
e) 31% or more				
Non-credit Developmental Mathematics	3	60.0%	2	40.0%
Algebra Sequence and Precalculus	2	66.7%	1	33.3%
Calculus and Above	2	66.7%	1	33.3%
Statistics	2	66.7%	1	33.3%
Technical Mathematics	1	50.0%	1	50.0%
Mathematics for Elementary Teachers	1	100.0%	0	.0%
Liberal Arts Math Courses	2	66.7%	1	33.3%
Other	1	100.0%	0	.0%

9. Which best describes the use of the comprehensive assessment tool?	8. Does your department have a formal plan for assessing student learning outcomes?			
	Yes		No	
	Count	Row %	Count	Row %
a) Required by your department				
Non-credit Developmental Mathematics	11	57.9%	8	42.1%
Algebra Sequence and Precalculus	10	58.8%	7	41.2%
Calculus and Above	7	53.8%	6	46.2%
Statistics	7	58.3%	5	41.7%
Technical Mathematics	4	50.0%	4	50.0%
Mathematics for Elementary Teachers	5	71.4%	2	28.6%
Liberal Arts Math Courses	5	62.5%	3	37.5%
Other	1	100.0%	0	.0%
b) Required by your college				
Non-credit Developmental Mathematics	7	87.5%	1	12.5%
Algebra Sequence and Precalculus	8	100.0%	0	.0%
Calculus and Above	8	100.0%	0	.0%
Statistics	8	100.0%	0	.0%
Technical Mathematics	4	100.0%	0	.0%
Mathematics for Elementary Teachers	5	100.0%	0	.0%
Liberal Arts Math Courses	8	100.0%	0	.0%
Other	4	100.0%	0	.0%
c) Optional choice of the instructor				
Non-credit Developmental Mathematics	1	33.3%	2	66.7%
Algebra Sequence and Precalculus	2	40.0%	3	60.0%
Calculus and Above	3	42.9%	4	57.1%
Statistics	4	44.4%	5	55.6%
Technical Mathematics	3	50.0%	3	50.0%
Mathematics for Elementary Teachers	2	66.7%	1	33.3%
Liberal Arts Math Courses	3	50.0%	3	50.0%
Other	2	100.0%	0	.0%

Cross-Tabulation of Number of Full-time Mathematics Faculty with Modifying the Comprehensive Assessment Tool Each Semester

10. Which best describes the frequency of when modifications are made to the comprehensive assessment Tool?	Full-Time Faculty											
	0 – 6		7 – 12		13 – 18		19 – 24		25 – 30		31 – 36	
	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	Row %
a) Each semester												
Non-credit Developmental Mathematics	6	31.6%	5	26.3%	4	21.1%	2	10.5%	1	5.3%	1	5.3%
Algebra Sequence and Precalculus	6	28.6%	5	23.8%	5	23.8%	3	14.3%	1	4.8%	1	4.8%
Calculus and Above	6	30.0%	4	20.0%	5	25.0%	3	15.0%	1	5.0%	1	5.0%
Statistics	6	30.0%	4	20.0%	5	25.0%	3	15.0%	1	5.0%	1	5.0%
Technical Mathematics	1	7.7%	3	23.1%	4	30.8%	3	23.1%	1	7.7%	1	7.7%
Mathematics for Elementary Teachers	2	16.7%	2	16.7%	5	41.7%	2	16.7%	0	.0%	1	8.3%
Liberal Arts Math Courses	5	31.3%	4	25.0%	4	25.0%	1	6.3%	1	6.3%	1	6.3%
Other	0	.0%	0	.0%	2	50.0%	1	25.0%	0	.0%	1	25.0%